16.27

$$y(x,t) = 2{,}00 \cdot 10^{-3}\,[\text{m}] \cdot \left(15.0\,[\text{m}^{-1}]\,x - 8{,}00\,[\text{s}^{-1}]\cdot t\right)^{0.5}$$

$$\frac{\partial^2 y}{\partial x^2} = \frac{1}{v^2}\,\frac{\partial^2 y}{\partial t^2}$$

$$v^2 = \frac{\frac{\partial^2 y}{\partial t^2}}{\frac{\partial^2 y}{\partial x^2}} = \frac{\ddot{y}}{y''} = \frac{\left(0{,}5\cdot(15x-8t)^{-0.5}\cdot -8\right)^{\cdot}}{\left(0{,}5\,(15-8t)^{-0.5}\cdot 15\right)'} = \ldots = \frac{(-8)^2}{15^2} \Rightarrow v = \frac{8}{15} =$$

$$\underline{0{,}5333\ \text{m/s}}$$

Vågen y är på formen $h(kx-\omega t)$

$$v = \lambda \cdot f = \frac{2\pi}{k}\cdot\frac{\omega}{2\pi} = \frac{\omega}{k} = \frac{8{,}00}{15.0} = \underline{0{,}5333\ \text{m/s}}$$